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TAXONOMIC STUDIES ON THE GENUS *SPILOMYIA* (MEIGEN, 1803) FROM CHINA, WITH DESCRIPTION OF A NEW SPECIES (DIPTERA, SYRPHIDAE)

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Abstract The paper describes a new species of the genus *Spilomyia* (Meigen) from China, *Spilomyia bidentica* sp. nov. The new species is similar to *S. panfilovi* Zimina in appearance, but is distinctly distinguished from other species of the genus in the hind leg having two apicoventral denticles anteroventrally. The type specimens are deposited in the Museum of Animal and Botany, Shaanxi University of Technology. A list and key to Chinese species of the genus *Spilomyia* are provided.

Key words Syrphidae, *Spilomyia*, new species, China.

The imagoes of *Spilomyia* are mostly large hoverflies, resembling social wasps in appearance and behavior (Curran, 1951; Steenis, 2000a, b). The genus *Spilomyia* was placed in tribe Milesiini by Hippa (1978), sharing the following combination of characters: head hemispherical, broader than thorax, bearing evident frontal prominence; eyes bare, with irregular colour spots and / or bands, shortly holoptic in male; face almost straight in lateral view, with upper oral margin protruded a little; antennae short, erect; basoflagellomere rounded; arista naked, inserted on basoflagellomere basally; mesonotum black with distinctly limited yellow patterns; scutellum with flatted margin; metasternum pilose; abdomen elongated oblongly, arched, with obvious abdominal margins; legs robust, with a apicoventral denticle on hind femur anterolaterally, hind tibia slightly curved; wing narrow, brownish anteriorly, with cell R_1 opened, vein r_{4+5} straight, vein r-m situated obliquely behind the middle of cell DM.

Spilomyia are mostly distributed in Holarctic, except for a few species in the Oriental Region (Knutson *et al.*, 1975; Peck, 1988; Thompson, 1997; Steenis, 2000; Huang *et al.*, 1996, 2012), with about 38 known species (Shiraki *et al.*, 1930; 1968; Curran, 1951; Vockeroth, 1958; Stackelberg, 1958; Violovitsh, 1985; Peck, 1988; Mutin *et al.*, 1999; Thompson, 1997; Steenis, 2000a, b), and 8 species in China (Shiraki, 1930; Cheng, 1940; Hull, 1950; Huang *et al.*, 1996, 2012; Huo *et al.*, 2006, 2007).

A new species of *Spilomyia* was found from China during the field investigation in 2012, thus the recorded species in China added to 9 species. The type specimens are deposited in the Museum of Animal and Botany, Shaanxi University of Technology.

1 Species of Spilomyia and Their Distributions in China

Spilomyia bidentica **sp. nov.**

Distribution. China (Liaoning).

Spilomyia chinensis **Hull, 1950**

Spilomyia chinensis Hull, 1950: 603. TL: China (Yunnan: Yei-chih, Mekong River).

Distribution. China (Yunnan).

Spilomyia curvimaculata **Cheng, 2012**

Spilomyia curvimaculata Cheng, 2012: 595. TL: China (Zhejian: Tianmushan, Anhui: Huangshan).

Distribution. China (Anhui, Jiangxi, Zhejiang).

Spilomyia diophthalma **(Linnaeus, 1758)**

Musca diophthalma Linnaeus, 1758: 593. TL: Sweden.

Distribution. China (Jilin); Czech Republic, France, Finland, Germany, Norway, Russia, Sweden.

Notes. The examined specimen from Changbai Shan, Jilin and the species is first recorded in China. The author is very grateful to Prof. REN Bing-Zhong who posted the specimen.

Spilomyia maxima **Sack, 1910**

Spilomyia maxima Sack, 1910: 18. TL: Russia (Ussuri Kasakewitsch).

Distribution. China (Jilin, Heilongjiang); Mongolia.

Spilomyia panfilovi **Zimina, 1952**

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Spilomyia panfilovi Zimina, 1952: 329. TL: Soviet Union (Eastern Siberia).

Distribution. China (Shaanxi); Russia.

Spilomyia scutimaculata Huo *et* Ren, 2006

Spilomyia scutimaculata Huo *et* Ren, 2006: 118. TL: China (Shaanxi).

Distribution. China (Shaanxi).

Spilomyia sulphurea Sack, 1910

Spilomyia sulphurea Sack, 1910: 19. TL: W. Pamir.

Distribution. China (Xinjiang); Former Soviet Union, Afghanistan.

Spilomyia suzukii Matsumura, 1916

Spilomyia suzukii Matsumura, 1916: 229. TL: Japan (Honshu, Kyoto).

Distribution. China (Beijing, Hebei, Jiangxi, Shaanxi, Sichuang, Zhejiang); former Soviet Union, Japan.

Key to species of the genus *Spilomyia* in China.

1. Katatergite yellow ………………………… 2
   Katatergite black ………………………… 6
2. Scutellum black with yellow posterior margin ………… 3
   Scutellum entirely yellow; mesonotum black, with yellow spots on postpronotum, inner sides of postpronotum and notopleura, lateral yellow stripes extending from behind transverse suture to posterior end of postalar callus, and a scutatus-shaped yellow spot on middle portion posteriorly ………………………… ***S. scutimaculata***
3. Hind femur with two apicoventral denticles anterolaterally, one of which near apical end is smaller ………………………… ***S. bidentica* sp. nov.**
   Hind femur with one apicoventral denticle anterolaterally ………………………… 4
4. Calypteres white with whitish fringe. Prescutum with very short decumbent hairs. Lateral margin of abdomen yellow. Dark median strip on frons of female long, reaching the ocelli. Coxae yellow. Tarsi mainly black …… ***S. panfilovi***
   Calypteres grey with golden fringe. Prescutum with short erect hairs. Lateral margin of abdomen mainly black. Dark median strip on frons of female short, not reaching the ocelli. Coxae brown or blackish. Tarsi mainly reddish yellow ………………………… 5
5. Abdomen of most part brown-red; basal half of 2nd tergite with a wide black median strip and a pair of big yellow lateral spots in both sides which are nearly triangular in shape and deeply depressed into a long triangular concave near each anterior margin of its outer lateral spot ………………………… ***S. curvimaculata***
   Abdomen black; 2nd tergite with yellow bands on middle and posterior margin, and middle band interrupted medially ………………………… ***S. suzukii***
6. Front tibiae and tarsi black (except for basotarsomere). Calypteres white with whitish fringe. Scutellum with broad pale yellow posterior margin. Abdominal bands yellow ………………………… ***S. sulphurea***
   Front tibiae and tarsi brownish or reddish yellow or brown. Calypteres grey with brownish fringe. Scutellum with brownish posterior margin. Abdominal bands brownish or reddish yellow ………………………… 7
7. Basal half of fore and mid femora and basal 2/3 of hind femur black ………………………… ***S. chinensis***
   Femora entirely reddish or brownish yellow, rarely with dark ventral strip ………………………… 8
8. Face without dark strip. Abdomen with relatively broad reddish yellow bands. Larger species (20 – 23 mm) ………………………… ***S. maxima***
   Face with dark strip. Abdomen with relatively narrow sharply defined yellow bands. Smaller species (15 – 17 mm) ………………………… ***S. diophthalma***

2 Description of New Species

***Spilomyia bidentica* sp. nov.** (Figs 1 – 6)

Female. Eyes bare, with dark colour pattern along eye margin and a longitudinal vitta of dark spots in irregular shape on posterior 1/3, between vitta and anterior margin of eye scattered nearly rounded spots in variable size. Head yellow, black on vertex and frontal prominence dorsally; shortly yellow pilose with black ones on ocellar triangle except for frontal prominence dorsally, oral margin and gena bare; frontal prominence distinct; a median tapering black vitta extended or not to ocellar triangle; occiput thickly white pollinose and pilose intermixed black setulate dorsally. Face straight in lateral view, with upper oral margin protruded; with a median black vitta extending not to base of antennae. Antenna erect, with two basal segments long, shiny black with black setulae; basoflagellomere shorter than two basal segments combined together, yellowish brown but darker dorsally; arista yellow, bare.

Mesonotum longer than wide, black, with a pair of anteromedial silvery pollinose vittae extending over transverse suture, silvery pollinose macula on inside end of transverse suture, yellow maculae on postpronotum, inside of posterpronotum and notopleuron, lateral S-shaped yellow vitta behind transverse suture extending to postalar callus, and a median inverted V-shaped yellow macula on mesonotum posteriorly. Scutellum emarginated, wide, black with wide yellow band posteriorly. Pile on mesonotum and scutellum short, appressed, concolorous with ground. Pleuron black, thinly short yellowish white pilose, with yellow maculae on anterior and posterior anepisternum, katepisternum anteriorly and posterodorsally, anepimeron posteriorly, katepimeron dorsally and katatergits.

Legs orange. Foreleg with femur dark brown apically, apical 2/3 of tibia and tarsi blackish brown; pile short yellow except for coxa and trochanter short black pilose and femur mostly black setulate but nearly bare posteroventrally. Midleg similar to foreleg, with femur nearly entirely orange, tibia brownish apically, apex of basotarsomere, 2 and 3 tarsomeres and dorsal of 4th tarsomere blackish brown basally; femur with long yellowish white pile posterodorsally. Hindleg with femur thicker with two apicoventral denticles anterolaterally, one of which near to the apical end is smaller; trochanter brown, femur blackish brown but orange basally and dark brown dorsally, the apex of tibia and tarsomeres dark brown to blackish brown; femur mostly short black setulate and tibia light coloured pilose with short black ones.

Wing with a median brownish cloud anteriorly. Wing microtrichose but bare on following cells: R posteriorly (behind spurious vein), BM and Cup anteriorly. Anal lobe with bare striped areas basally. Calypteres and their fringes white.

Abdomen elongated oval, arched, distincly emarginated. Abdominal tergites black with tergite 1 yellow laterally, tergites 2 – 4 respectively with a yellow fascia on median and posterior margin, yellow fasciae on middle of tergites 3 and 4 narrowly separated medially or not but with triangular fovea on posterior margins, lateral margins of tergites yellow except for tergite 2 basally. Pile on abdomen short and sparse dorsally, concolorous with ground. Sterna black with yellowish white fasciae on posterior margins of sterna 1 – 4.

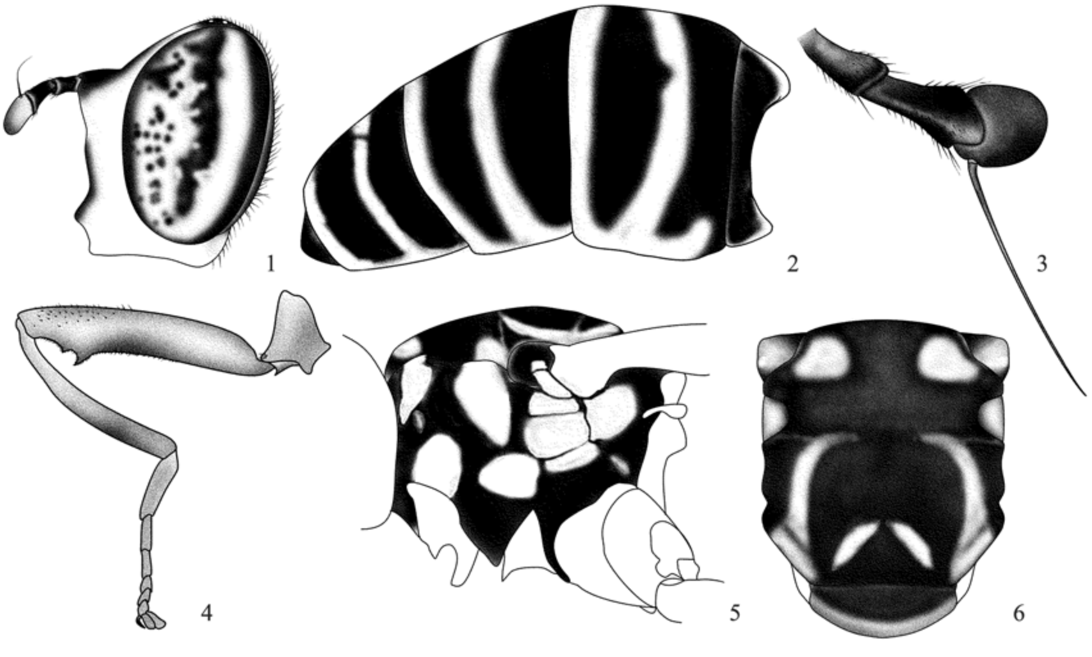
♀ Body length 15 mm, wing length 11 mm.

Male. Unknown.

Holotype ♀, Dahaishan (42°N, 120°30′E; alt. 406 m), Beipiao City, Liaoning, China, 2 Aug. 2012, HUO Ke-Ke. Paratype 1 ♀, same data as holotype.

Remarks. The new species is similar to *S. panfilovi* Zimina based on the key by Stackelberg (1958), but the new species is distinctly distinguishd from the speices of the genus by having two anterioventral teeth on the apex of the hind femur, and the others of the genus with only one tooth.

Etymology. The new name is derived from the Latin words *bi-* (two) and *dentica* (tooth), referring to hind femur with two apicoventral denticles anterolaterally. Gender is feminine.



Figs 1 – 6. *Spilomyia bidentica* sp. nov., female. 1. Head, lateral view. 2. Abdomen, laterodorsal view. 3. Antenna, inside view. 4. Hindleg, anterior view. 5 – 6. Thorax. 5. Lateral view. 6. Dorsal view.

REFERENCES

Cheng, C-T 1940. A preliminary list of Chinese Syrphiddae with descriptions of and notes on those forms commonly found in Foochow. *Bull. Biol. Christan University Foocho.*, 1: 40 – 70.

Curran, C. H. 1951. Synopsis of the North American species of *Spilomyia* (Syrphidae, Diptera). *Am. Mus. Novit.*, 1492: 1 – 11.

Hippa, H. 1978. The genus *Macrozelima* Stackelberg (Diptera: Syrphidae). *Ent. Scand.*, 9: 15 – 20.

Huang, C-M and Cheng, X-Y 2012. Fauna Sinica, Insecta, Vol. 50, Diptera, Syrphidae. Science Press, Beijing. 595 – 600.

Huang, C-M, Cheng, X-Y and Yang, J-K 1998. Syrphidae. *In*: Xue, W-Q and Zhao, J-M (eds.), Flies of China, Part Ⅰ. Liaoning Science and Technology Press, Shenyang. 118 – 223.

Hull, F. M. 1950. Studies upon syrphid flies in the British Museum (Natual History). *Ann. and Mag. Nat. Hist.*, 3: 603 – 624.

Huo, K-K and Ren, G-D 2006. A new species and a new record species of genus *Spilomyia* (Diptera: Syrphidae) from China. *Entomotaxonomia*, 28: 118 – 122.

Huo, K-K, Ren, G-D and Zheng, Z-M 2007. Fauna of Syrphidae from Mt. Qinling-Bashan in China (Insecta: Diptera). Chinese Agricultural Science and Technology Press, Beijing. 1 – 512.

Knutson, L. V., Thompson, F. C. and Vockeroth, J. R.

1975. Family Syrphidae. *In*: Mercedes, D. D. and Hardy, D. E. (eds.), A Catalog of the Diptera of the Oriental Region. The University Press of Hawaii, Honolulu. 364.

Lucas, J. A. W. 1964. A new species of *Spilomyia* from Sicily (Diptera, Syrphidae). *Zool. Meded.*, 39: 206 – 208.

Meigen, J. W. 1803. Versuch einer neuen Gattungs-Eintheilung der europaischen zweiflugligen Insekten. *Mag. Insektenkd.*, 2: 259 – 281.

Mutin, V. A. and Barkalov, A. V. 1999. Family Syrphidae. *In*: Key to the Insect of Russian Far East. Vol. Ⅵ. Diptera and Siphonaptera. Pt 1. Dal'nauka Publ. Vladivostok. pp. 342 – 500.

Nayar, J. L. and Cole, F. R. 1968. Two new species of *Spilomyia* Meigen (Syrphidae: Diptera). *Pan-Pac. Ent.*, 44: 211 – 214.

Peck, L. V. 1988. Family Syrphidae. *In*: Soos, A. and Papp, L. (eds.), Catalogue of Palaerctic Diptera. Budapest: Akad. Kiado. & Amsterdam: Elsevier Sci. Publi. 8: 213 – 214.

Sack, P. 1910. Neue und Wenig Bekannte Syrphiden des Palaearktischen Faunen-gebietes. Beil. Programm Wohler-Realgymn. Frankfurt a. M. 1 – 42.

Sack, P. 1932. Syrphidae. *In*: Lindner, E. (ed.), Die Fliegen der Palaearktischen Region. E. schweizerbart'sche Verlagsbuchhandlung, Stuttgart. 427 – 432.

Shiraki, T. 1968. Syrphidae (Insecta: Diptera). *In*: Fauna Japonica, Vol. Ⅲ. Biogeogr. Soc. Japan, Tokyo. 3 – 11.

Shiraki, T. 1930. Die Syrphidea des Japanischen Kaiserreichs, mit Berucksichtigung benachbarter Gebiete. *Mem. Fac. Sci. Agric. Taihoku Imp. Univ.*, 1 (1): 111 – 113.

Stackelberg, A. A. 1958. The palaeartic species of the genus *Spilomyia* Mg. (Diptera, Syrphidae). *Ent. Obozr.*, 37: 759 – 768.

Steenis, B. A. J. van and W. van Steenis. 2000. *Spilomyia* species (Diptera: Syrphidae) in Dutch collections, with notes on their European distribution. *Ent. Ber. Amst.*, 60 (3): 41 – 45.

Steenis, J. van 2000a. The West-Palaearctic species of *Spilomyia* Meigen. *Mitt. Ent. Schweiz. Ges.*, 73: 143 – 168.

Steenis, J. van 2000b. Review of the type species of *Spilomyia* Meigen, 1803 (Diptera, Syrphidae) from Japan. *Int. J. Dipterol. Res.*, 11 (1): 33 – 36.

Thompson, F. C. 1997. Spilomyia flower flies of the New World (Diptera). *Mem. Ent. Soc. Washington*, 18 (1996): 261 – 272.

Violovitsh, N. A. 1985. New flower flies (Diptera, Syrphidae) of the Palaearctic fauna. *Nov. Mal. Vidy Faun. Sibir.*, 18: 80 – 96.

Vockeroth, J. R. 1958. Two new Nearctic species of *Spilomyia* (Diptera: Syrphilidae), with a note on the taxonomic value of wing microtrichia inn the Syrphidae. *Can. Ent.*, 90: 284 – 291.

Zimina, L. V. 1952. A new species of *Spilomyia* (Diptera, Syrphidae) from the Far East. *Ent. Obozr.*, 32: 329 – 331.

中国斑胸蚜蝇属研究及一新种记述

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摘　要　斑胸蚜蝇属 *Spilomyia* Meigen, 1803 多为大型种类，形态及行为上近似社会性的胡蜂。Hippa 将其置于迷蚜蝇族 Milesiini。斑胸蚜蝇属主要分布于全北区，东洋区有少数分布，已记载约 38 种，中国记载 8 种。本文描述 1 新种，中国斑胸蚜蝇属种类增加到 9 种。模式标本保存于陕西理工学院标本馆。文中给出中国已知种类及其检索表。

双齿斑胸蚜蝇，新种 *Spilomyia bidentica* sp. nov.（图 1 ~ 6）

♀　体长 15 mm，翅长 11 mm。

雄性　未知。

正模 ♀，辽宁北票大黑山，2012-08-02，霍科科采。副模 1♀，辽宁北票大黑山，2012-08-02，霍科科采。

新种外形上近似 *Spilomyia panfilovi* Zimina, 1952。但新种后足腿节端前腹侧具 2 齿突，与本属的其他种类明显区别。

词源：新种种名源自拉丁词 *bi-*（2 个）和 *dentica*（齿）组成，指后足腿节端部具 2 个齿。

关键词　蚜蝇科，斑胸蚜蝇属，新种，中国.

中图分类号　Q969.44